

USPTO Serial Number: 10/014,744

Nong Ye et al.

Reply to Office Action dated February 9, 2004

REMARKS

Applicant(s) have amended the specification to correct the minor informalities noted by the Examiner. A typographical error is corrected in equation (13) of paragraph [00046], i.e. expression should be squared. No new matter is believed to be made by the above amendments to the specification.

Applicant(s) have amended the drawings as per the Examiner's statement.

The Office Action rejects claim 1, 4, 6-10, 13-16, 19-21, and 24 under 35 U.S.C. 103 as being unpatentable over Austin in view of Sunil.

Applicant(s) have amended claim 1 to more clearly distinguish over the prior art references. Claim 1, as amended, recites a method for classification of data comprising providing first data from a physical process, the first data including a class label associated with attributes of the first data, deriving a dummy cluster from centroid coordinates of the first data associated with the class label, wherein the dummy cluster has a class label different than the class label associated with the attributes of the first data, determining distance measures between the first data and a plurality of clusters which include the dummy cluster, creating a real cluster in the plurality of clusters if the first data is closest to the dummy cluster, identifying a closest match between second data and the plurality of clusters, and classifying the second data based on a class label of the closest match from the plurality of clusters.

Applicant(s) believe that neither Austin nor Sunil, taken singularly or in combination, teach or suggest deriving a dummy

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cluster from centroid coordinates of the first data associated with the class label, wherein the dummy cluster has a class label different than the class label associated with the attributes of the first data. Austin does not disclose the step of deriving a dummy cluster as claimed. Applicant(s)' dummy clusters are temporary or artificial clusters, i.e., separate and distinct from the real clusters, which are created to assist in the classification process. In fact, the dummy clusters may be removed after the training process, see paragraph [00059].

Austin discusses a "cluster count" and a "dummy codebook index" in column 12, line 58, through column 13, line 21, but uses the terms in a completely different context. Austin does not address the formation of any dummy cluster separate from real clusters in a plurality of clusters to aid in the classification of the first data.

Moreover, Austin makes no mention of giving any dummy cluster a class label different than the class label associated with the attributes of the first data. Applicant(s) assign the dummy clusters a different class label to distinguish them from the real clusters, see paragraph [00040]. Austin does not perform this step.

Applicant(s) acknowledge that the Sunil reference discloses determining distance measures.

However, since Austin fails to teach or suggest deriving a dummy cluster from centroid coordinates of the first data associated with the class label, wherein the dummy cluster has a class label different than the class label associated with the attributes of the first data, claim 1 as amended is believed to patentably distinguish over the prior art references, taken singularly or in combination.

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Applicant(s) have amended claim 2 as per the Examiner's helpful suggestion to include the limitations of the base claim. Claims 3-7 are believed to be in condition for allowance as each is dependent from an allowable base claim.

Claim 8, as amended, recites, in part, deriving a dummy cluster from centroid coordinates of the first data associated with the class label, wherein the dummy cluster has a class label different than the class label associated with the attributes of the first data. For the reasons given above, claim 8 is believed to patentably distinguish over the Austin and Sunil references, taken singularly or in combination. Claims 9-13 are believed to be in condition for allowance as each is dependent from an allowable base claim.

Claim 14, as amended, recites, in part, deriving a dummy cluster from centroid coordinates of the first data associated with the class label, wherein the dummy cluster has a class label different than the class label associated with the attributes of the first data. For the reasons given above, claim 14 is believed to patentably distinguish over the Austin and Sunil references, taken singularly or in combination. Claims 15-19 are believed to be in condition for allowance as each is dependent from an allowable base claim.

Claim 20, as amended, recites, in part, second instructions for deriving a dummy cluster from centroid coordinates of the first data associated with the class label, wherein the dummy cluster has a class label different than the class label associated with the attributes of the first data. For the reasons given above, claim 20 is believed to patentably distinguish over the Austin and Sunil references, taken singularly or in combination. Claims 21-24 are believed to be

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in condition for allowance as each is dependent from an allowable base claim.

Applicant(s) have added new claims 25-30. New claim 25 recites a method of classifying first data from a physical process, comprising providing first data which includes a class label associated with attributes of the first data, forming a dummy cluster having a class label different than the class label associated with the attributes of the first data, and creating a real cluster in a plurality of clusters which includes the dummy cluster if the first data is closest to a cluster having a class label different than the class label associated with the first data. The Austin reference does not teach or suggest forming a dummy cluster having a class label different than the class label associated with the attributes of the first data. Therefore, new claims 25-30 are believed to patentably distinguish over the Austin and Sunil references, taken singularly or in combination.

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Applicant(s) have made an earnest attempt to place this application in condition for allowance. In light of the remarks and/or amendments set forth above, Applicant(s) respectfully request reconsideration and allowance of claims 1-30. If there are matters that can be discussed by telephone to further the prosecution of the Application, Applicant(s) invite the Examiner to call the undersigned attorney at the Examiner's convenience.

The Commissioner is authorized to charge any fees due in connection with this filing and during the pendency of this application to Deposit Account No. 17-0055.

Respectfully submitted,

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